AMENDMENTS TO THE CLAIMS

Claims 1-29 (Previously canceled)

30. (Currently amended) A machine readable storage medium comprising a program containing a set of instructions for causing a cell screening system to execute procedures for detecting the distribution of one or more cellular macromolecule of interest between a cell cytoplasm and a [~~cell~~] **plasma** membrane in individual cells comprising:

a) scanning multiple cells in an array of locations which contain multiple cells to obtain fluorescent signals from fluorescent reporter molecules in the cells, wherein the cells possess a plurality of fluorescent reporter molecules, wherein the plurality of fluorescent reporter molecules comprises one or more fluorescent reporter molecules to report on

(i) one or more cellular macromolecule of interest;

(ii) the cell cytoplasm and

(iii) the [~~cell~~] **plasma** membrane;

b) identifying individual cells from the fluorescent signals from the plurality of fluorescent reporter molecules;

c) creating a [~~cell~~] **plasma** membrane mask and a cell cytoplasm mask from the plurality of fluorescent reporter molecules;

d) determining an intensity of the fluorescent signals from the fluorescent reporter molecules that report on the one or more cellular macromolecule of interest within the [~~cell~~] **plasma** membrane mask and the cell cytoplasm mask in the individual cells in response to contacting the cells with a test stimulus;

e) comparing the intensity of the fluorescent signals from the fluorescent reporter molecules that report on the one or more cellular macromolecule of interest within the [~~cell~~] **plasma** membrane mask and the cell cytoplasm mask in the individual cells in response to contacting the cells at a first time point with a test stimulus to:

i) an intensity of fluorescent signals from the fluorescent reporter molecules that report on the one or more cellular macromolecule of interest within the [~~cell~~] **plasma** membrane mask and the cell cytoplasm mask in the individual cells in response to contacting the cells with the test stimulus from at least a second time point; and/or

ii) an intensity of fluorescent signals from the fluorescent reporter molecules that report on the one or more cellular macromolecule of interest within the [~~cell~~] **plasma** membrane mask and the cell cytoplasm mask in the individual cells that have not been contacted with the test stimulus; and

f) determining the effect of the test stimulus on the distribution of the one or more cellular macromolecule of interest between the [~~cell~~] **plasma** membrane and the cell cytoplasm in the individual cells as a function of the intensity of the fluorescent signals from the fluorescent reporter molecules that report on the one or more cellular macromolecule of interest within the [~~cell~~] **plasma** membrane mask and the cell cytoplasm mask in the individual cells in response to the test stimulus.

Claims 31-43 (Previously canceled)

44. (Currently amended) The machine readable storage medium of claim 30, wherein the identifying of the individual cells comprises identifying the nucleus of the individual cells.

45-53. (Previously canceled)

54. (Currently amended) The machine readable storage medium of claim 30, wherein the procedures further comprise determining a ratio of integrated intensity of the fluorescent signals from the fluorescent reporter molecules that report on the one or more cellular macromolecule of interest between the cytoplasmic mask and the [~~cell~~] **plasma** membrane mask in the multiple cells.

55-60. (Previously canceled)

61. (Previously added) The machine readable storage medium of claim 30, wherein the cellular macromolecule of interest is a protein.

62. (Previously added) The machine readable storage medium of claim 30, wherein the fluorescent reporter molecules that report on the one or more cellular macromolecule of interest comprises a fluorescently labeled antibody.

63. (Previously added) The machine readable storage medium of claim 30, wherein the multiple cells are fixed cells.

64. (Currently amended) The machine readable storage medium of claim 30, wherein the intensity of the fluorescent signals from the fluorescent reporter molecules that report on the one or more cellular macromolecule of interest within the [~~cell~~] **plasma** membrane mask and the cell cytoplasm mask in the individual cells in response to contacting the cells at the first time point with the test stimulus is compared to the intensity of fluorescent signals of the fluorescent reporter molecules that report on the one or more cellular macromolecule of interest within the [~~cell~~] **plasma** membrane mask and the cell cytoplasm mask in the individual cells in response to contacting the cells with the test stimulus from at least the second time point.

65. (Previously added) The machine readable storage medium of claim 64, wherein the multiple cells are live cells.